

**A request for continued examination** under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 6/2/2008 **has been entered.**

An **Examiner's Amendment** to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this Examiner's Amendment was given in a telephone interview with Ms. Viola T. Kung , on 9/18/2008 .

**Examiner's Amendment to the Claims**

Cancel claims 13, 15, 21-22.

In claim 1, lines 3-4, after "proteorhodopsin variant ", delete " is a naturally occurring proteorhodopsin or a proteorhodopsin homolog".

In claim 1, line 4, after " 90% identity with", delete "the" and substitute therefor --- its corresponding ---.

In claim 1, line 6, after "SEQ ID NO:3 for ", delete "a".

In claim 16, line 4, after "or the proteorhodopsin", delete "homolog" and substitute therefor --- variant of claim 1---.

In claim 16, line 8, after " the proteorhodopsin", delete "homolog" and substitute therefor --- variant---.

In claim 23, line 2, after "proteorhodopsin", delete "homolog" and substitute therefor --- variant ---.

In claim 25, line 3, after "variant is", delete " a naturally occurring proteorhodopsin having a sequence".

In claim 25, line 4, after ", 151", delete "or" and substitute therefor --- and ---.

In claim 25, line 5, before "having at least 90%", delete "a proteorhodopsin homolog".

In claim 25, line 8, after "SEQ ID NO:3 for ", delete "a".

In claim 26, line 2, after "proteorhodopsin", delete "homolog" and substitute therefor --- variant ---.

The following is an **Examiner's Statement of Reasons for Allowance**:

Claims 1, 4-5, 7-9, 14, 16, 19, 23, 25-27 are directed to a proteorhodopsin mutant having improved optical characteristics, said mutant is a proteorhodopsin variant comprising a mutation in a conserved histidine residue, said variant having at least 90% identity with its corresponding naturally occurring proteorhodopsin, said conserved histidine residue is present at position equivalent to position 75 of SEQ ID NO:3 when said variant is aligned with SEQ ID NO:3 for maximum identity, wherein said proteorhodopsin mutant has lower  $pK_{th}$  in comparison with said variant and method of preparing said product by amino acid mutagenesis.

Claimed product is free of prior art. Further the prior art fails to suggest such specifically claimed product. Hence, said product is also non-obvious. Since said

product is both novel and non-obvious, a method of preparing said product as specifically claimed is also novel and non-obvious.

**Claims 1, 4-5, 7-9, 14, 16, 19, 23, 25-27 are allowed.**

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maryam Monshipouri whose telephone number is (571) 272-0932. The examiner can normally be reached on Tues.-Fri., from 7:00 a.m to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleene Kerr Bragdon can be reached on (571) 272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Maryam Monshipouri/

Primary Examiner, Art Unit 1656

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